(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



(43) International publication date

19 August 2004 (19.08.2004)

(10) International publication number

WO 2004/070706 A1

(51) International patent classification⁷:

G10L 19/14, 19/00, H03M 7/40, H04B 1/66

(21) International application number:

PCT/FR2003/003870

(22) International filing date:

22 December 2003 (22.12.2003)

(25) Language of filing:

French

(26) Language of publication:

French

(30) Data relating to the priority:

03/00,164

8 January 2003 (08.01.2003)

FR

(71) Applicant (for all designated States except US): FRANCE TELECOM [FR/FR]; 6, Place d'Alleray, F-75015 Paris (FR).

(72) Inventors; and

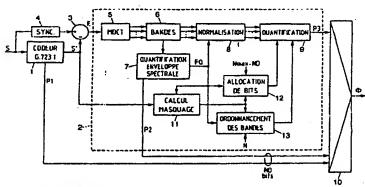
- (75) Inventors/Applicants (US only): KOVESI, Balazs [HU/FR]; 12, résidence Corlay, F-22300 Lannion (FR). MASSALOUX, Dominique [FR/FR]; 53, rue du Pré de Saint-Maur, F-22700 Perros-Guirec (FR).
- (74) Representatives: LOISEL, Bertrand, et al; Cabinet Plasseraud, 65/67 rue de la Victoire, F-75440 Paris Cedex 09 (FR).
- (81) Designated states (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ,

[continued on next page]

As printed

(54) Title: METHOD FOR ENCODING AND DECODING AUDIO AT A VARIABLE RATE

(54) Titre: PROCEDE DE CODAGE ET DE DECODAGE AUDIO A DEBIT VARIABLE



1 ENCODER G.723.1

6:- BANDS 7:- QUANTISATION OF SPECTRAL ENVELOPE

9:- QUANTISATION 11:- CALCULATION OF MASKING

BIT ALLOCATION

13:- ORDERING OF BANDS

(57) Abstract: A maximum of Nmax bits for encoding is defined for a set of parameters which may be calculated from a signal frame. The parameters for a first sub-set are calculated and encoded with N0 bits, where N0 < Nmax. The allocation of Nmax -NO encoding bits for the parameters of a second sub-set are determined and the encoding bits allocated to the parameters for the second sub-set are classified. The allocation and/or order of classification of the encoding bits are determined as a function of the encoding parameters for the first sub-set. For a total of N available bits for the encoding of the total parameters (NO < N = Nmax), the parameters for the second sub-set allocated the N - NO encoding bits classified the first in said order are selected. Said selected parameters are calculated and encoded to give the N - N0 bits. The N0 encoding bits for the first sub-set and the N - N0 encoding bits for the selected parameters for the second sub-set are finally introduced into the output sequence of the encoder.

(57) Abrégé: Un maximum de Nmax hits de codage est défini pour un ensemble de paramètres calculables d'après une trame de signal. Les paramètres d'un premier sous-ensemble sont calculés et codés sur NO bits, avec NO < Nmax. On détermine une allocation de Nmax - N0 bits de codage pour les paramètres d'un second sous-ensemble, et on classe les bits de codage alloués

OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

Published:

with International Search Report

(84) Designated states (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For an explanation of the two-letter codes and the other abbreviations, reference is made to the explanations ("Guidance Notes on Codes and Abbreviations") at the beginning of each regular edition of the PCT Gazette.

Declaration under Rule 4.17

of inventorship (Rule 4.17(iv)) for the following designation US

aux paramètres du second sous-ensemble. On détermine l'allocation et/ou l'ordre de classement des bits de codage en fonction des paramètres codés du premier sous-ensemble. Pour un total de N bits disponibles pour le codage de l'ensemble de paramètres (N0 < N ≤ Nmax), on sélectionne les paramètres du second sous-ensemble auxquels sont alloués les N - N0 bits de codage classés les premiers dans ledit ordre. Ces paramètres sélectionnés sont calculés et codés pour produire les N - N0 bits. Les N0 bits de codage du premier sous-ensemble et les N - N0 bits de codage des paramètres sélectionnés du second sous-ensemble sont finalement insérés dans la séquence de sortie du codeur.